REMARKS

Applicants thank the Examiner for the first complete examination of the instant application. Claims 1-3 are currently pending in the instant application. Independent claim 1 has been amended by way of this Amendment. Reconsideration of this application, as amended, is respectfully requested.

REJECTION UNDER 35 U.S.C. § 103(A)

Claims 1 and 2 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Di Matteo et al., U.S. Patent No. 4,511,252 in view of Poradish et al., U.S. Patent No. 5,905,545. This rejection is respectfully traversed.

Amended independent claim 1 sets forth a combination of limitations including "successively projecting a number of encoded illumination patterns by driving said digital micro mirror arrangement to sequentially illuminate said object surface, with the digital micro mirror arrangement being sequentially illuminated with at least three colors in a beam path through a variable color filter onto said object surface for identification of at least three depth planes of said object in a single image." Applicants respectfully submit, for the following reasons, that the patent documents relied upon by the Examiner either in combination together or standing alone fail to teach or suggest at least this limitation of independent claim 1.

De Matteo et al. teach an arrangement for sensing the geometric characteristics of an object. As is illustrated in Figure 1, an object 20 with a surface 22 to be geometrically analyzed may be placed on a support 24. A plurality of projectors 26, 28, 30 and 32 are positioned in

spaced relationship around the object 20 for the purpose of covering the entire surface of the object or a predetermined portion thereof. Each of the projectors 26, 28, 30 and 32 projects a collimated illuminating beam 34 onto the object 20. (See column 4, lines 17-26.)

According to Di Matteo et al., the projectors 26. 28, 30 and 32 function to illuminate, respectively, pre-selected sections of the surface 22. This illumination process is facilitated by various masks 36. In addition to the foregoing, cameras 40 are used to take photographs 44 of sectionized patterns appearing on the object 20. Then, binary codes are used to define subdivisions on the surface 22 of the object 20. Di Matteo et al. also refer to the subdivisions as bands.

According to Di Matteo et al., the various bands may be represented by a particular color scheme. The color scheme includes three distinct colors, for example, red, green, and blue. These bands are used to illuminate and distinguish various acquired bands over the surface 22. Di Matteo et al. clearly state that the "alternating color bands may be used conveniently to subdivide the surface 22 into a sequence of distinct bands in a manner analogous to that described above for the binary code system." In other words, Di Matteo et al. uses the color scheme in order to distinguish neighboring bands from one another.

Poradish et al. teach a full-color projection display system which utilizes two light modulators. In particular, the relied upon patent document includes the use of a first spatial light modulator 30a and a second spatial light modulator 30b. An image may be projected on a screen by way of modulated light from the spatial light modulators 30a and 30b. Poradish et al. makes

no reference or suggestion that the full-color projection display system is capable of object identification in an image.

While not conceding the priority of the Examiners combination of Di Matteo et al. and Poradish et al., Applicants respectfully submit that it is evident from the above description of the two relied upon patent documents that the disclosures thereof fail to teach or suggest "successively projecting a number of encoded illumination patterns by driving said digital micro mirror arrangement to sequentially illuminate said object surface, with the digital micro mirror arrangement being sequentially illuminated with at least three colors in a beam path through a variable color filter onto said object surface for identification of at least three depth planes of said object in a single image." (See independent claim 1 of the instant application.) Di Matteo et al. as discussed hereinabove, merely teache the possibility of distinguishing neighboring sections with various colors, and Poradish et al. do not even address the idea of reproduction of an obtained image. Accordingly, Applicants respectfully submit that the combination of Di Matteo et al. and Poradish et al. does not approach that which is set forth in independent claim 1.

With regard to the rejected dependent claim, Applicants respectfully submit that this claim is allowable at least due to its dependence upon an allowable independent claim.

In view of the above remarks, Applicants respectfully request reconsideration and withdrawal of the claim rejection in view Di Matteo et al. and Poradish et al.

With regard to the Pipitone et al. patent document, Applicants respectfully submit that from even a cursory review of this document, it is clear that the disclosure thereof fails to make up for the deficiencies of Di Matteo et al. and Poradish et al. Therefore, a combination of these

patent documents may not be utilized in order to reject that which is set forth in independent claim 1.

With regard to rejected dependent claim 3, Applicants respectfully submit that this claim is allowable at least due to its dependence upon an allowable independent claim. Accordingly, reconsideration and withdrawal of the rejection of dependent claim 3 are respectfully requested.

In view of the above amendment and remarks, Applicants respectfully submit that the patent documents relied upon by the Examiner fail to teach or suggest the limitations of the pending claims. Therefore, reconsideration and withdrawal of the rejections are respectfully requested.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, and/or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite the prosecution of this application, the Examiner is invited to telephone Timothy R. Wyckoff (Reg. No. 46,175) at (703) 390-3030 in the Washington D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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VERSION OF MARKED-UP CLAIMS

IN THE CLAIMS

The following claim has been amended.

1. (Amended) A method for three-dimensional identification of an object having an object surface, said method comprising the steps of:

illuminating a digital micro mirror arrangement via a light source;

successively projecting a number of encoded illumination patterns [in a beam path through a variable color filter onto said object surface] by driving said digital micro mirror arrangement to sequentially illuminate said object surface, with the digital micro mirror arrangement being sequentially illuminated with at least three colors in a beam path through a variable color filter onto said object surface for identification of at least three depth planes of said object in a single image;

registering said image of said object with a color camera from a direction different from said beam path; and

calculating a high precision topography of said object surface from said registration in a control and evaluation unit.